

Tactical Combat Casualty Care

February 2010



Tactical Evacuation Care



OBJECTIVES

- **DESCRIBE** the differences between MEDEVAC and CASEVAC
- **DESCRIBE** the four evacuation categories
- **DESCRIBE** the differences between Tactical Field Care and Tactical Evacuation Care
- **LIST** the nine items in a MEDEVAC request



OBJECTIVES

- **DESCRIBE** the additional assets that may be available for airway management, electronic monitoring, and fluid resuscitation
- **LIST** the indications and administrative controls applicable to giving Packed Red Blood Cells (PRBCs) in the field



OBJECTIVES

- **STATE** the rules of thumb for calling for Tactical Evacuation and the importance of careful calculation of the risk/benefit ratio prior to initiating the call



Tactical Evacuation

- Casualties will need to be evacuated as soon as feasible after significant injuries.
- Evacuation asset may be a ground vehicle, aircraft, or boat.
- **Evacuation time is highly variable - evacuations in Afghanistan typically take much longer than those in Iraq.**
- Tactical situation and hostile threat to evacuation platforms may differ markedly from one casualty scenario to another.
- The Tactical Evacuation phase allows for additional medical personnel and equipment to be used.



Evacuation Terminology

- **MEDEVAC**: dedicated special medical evacuation assets marked with a Red Cross – MEDEVAC platforms are non-combatant assets
- **CASEVAC**: non-medical casualty evacuation platforms – may carry a Quick-Reaction force and provide close air support as well
- **Tactical Evacuation (TACEVAC)** – this term encompasses both of the above types of evacuation



Aircraft Evacuation Planning

- **Flying rules are very different for different aircraft and units**
- **Consider:**
 - **Distances and altitudes involved**
 - **Day versus night**
 - **Passenger capacity**
 - **Hostile threat**
 - **Medical equipment**
 - **Medical personnel**
 - **Icing conditions**





Aircraft Evacuation Planning

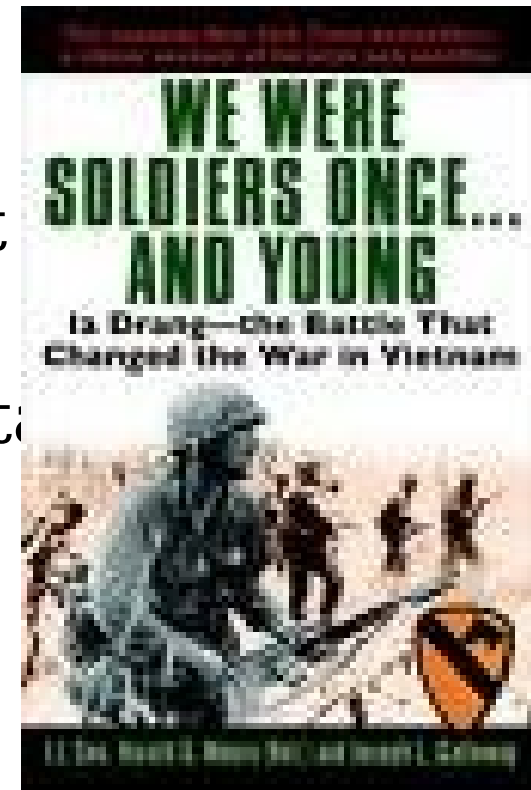
- Ensure that your evacuation plan includes aircraft capable to fly the missions you need
- Primary options





CASEVAC vs MEDEVAC: The Battle of the Ia Drang Valley

- 1st Bn, 7th Cavalry in Vietnam
- Surrounded by 2000 NVA - heavy casualties
- Called for MEDEVAC
- Request refused because LZ was not secure
- Eventual pickup by 229th Assault Helo Squadron after long delay
- Soldiers died because of this mistake
- Must get this part right





Ground Vehicle Evacuation

- More prevalent in urban-centric operations in Iraq than austere environment ops in Afghanistan
- May also be organic to unit or designated MEDEVAC





Tactical Evacuation Care

- TCCC guidelines for care are largely the same in TACEVAC as for Tactical Field Care.
- There are some changes that reflect the additional medical equipment and personnel that may be present in the TEC setting.
- This section discusses the differences between those





Airway in TACEVAC

- Additional Options for Airway Management
 - Laryngeal Mask Airway
 - CombiTube
 - Endotracheal Intubation (ETT)
- Confirm ETT placement with CO2 monitoring
- These airways are advanced skills not taught in basic TCCC course





Breathing in TACEVAC

- Watch for tension pneumothorax as casualties with a chest wound ascend to the lower pressure at altitude.
- Pulse ox readings will become lower as casualty ascends unless supplemental oxygen is added.
- Chest tube placement may be considered if a casualty with suspected tension pneumo fails to respond to needle decompression



Supplemental Oxygen in Tactical Evacuation Care

Most casualties do not need supplemental oxygen, but have oxygen available and use for:

- Casualties in shock
- Low oxygen sat on pulse ox
- Unconscious casualties
- Casualties with TBI
(maintain oxygen saturation > 90%)
- Chest wound casualties





Fluid Resuscitation in TACEVAC

- Hextend resuscitation algorithm as before
- Further resuscitation with packed red blood cells (PRBCs), Hextend, or Lactated Ringer's solution (LR) as indicated.
- If a casualty with TBI is unconscious and has a weak or absent pulse, resuscitate as necessary to maintain a systolic blood pressure of 90 mmHg or above.





Packed Red Blood Cells in TACEVAC

- May be useful on prolonged evacuations when logistically feasible
- Coordination with blood bank is key
- Keep refrigerated until used
- Specific transfusion guidelines in PHTLS Manual
- Requires special training to use
- Consider 1:1 PRBC/plasma infusion ratio if used





Remember Prevention of Hypothermia in Helicopters!



- Cabin wind and altitude cold result in
- **Protection especially important for casualties in shock and burn casualties**



TACEVAC CARE - Hoisting



- Rigid Litters Only When Hoisting
- Check and double-check rigging

The image shows two helicopters, likely Black Hawks, parked on a tarmac. The scene is backlit by a bright, low sun, creating a strong silhouette effect on the aircraft and the ground crew members standing around them. The word "Questions?" is superimposed in a large, white, serif font over the center of the image.

Questions?



Standard Evacuation Categories

- **Urgent/Urgent Surgical**: 2 hour window to save life, limb, or eyesight
- **Priority**: Can be safely managed for 4 hours
- **Routine**: Can be safely managed for 24 hours
- **Convenience**: Can be safely managed at location and do not hinder ongoing tactical mission

Tactical Evacuation: Eight Rules of Thumb





TACEVAC 8 Rules of Thumb: Assumptions

- **These Rules of Thumb are designed to help the corpsman or medic determine the true urgency for evacuation.**
- **They assume that the decision is being made at 15-30 minutes after wounding.**
- **Also that care is being rendered per the TCCC guidelines.**
- **Most important when there are tactical constraints on evacuation:**
 - **Interferes with mission**
 - **High risk for team**
 - **High risk for TACEVAC platform**



TACEVAC Rule of Thumb #1

Soft tissue injuries are common and may look bad, but usually don't kill unless associated with shock.





TACEVAC Rule of Thumb #2

Bleeding from most extremity wounds should be controllable with a tourniquet or hemostatic dressing. Evacuation delays should not increase mortality if bleeding is controlled.





TACEVAC Rule of Thumb #3

Casualties who are in shock should be evacuated as soon as possible



Gunshot wound to the abdomen



TACEVAC Rule of Thumb #4

Casualties with penetrating wounds of the chest who have respiratory distress unrelieved by needle decompression should be evacuated as possible.





TACEVAC Rule of Thumb #5

Casualties with blunt or penetrating trauma of the face associated with airway difficulty should have an immediate airway established and be evacuated as soon as possible.

REMEMBER to let the casualty up and lean forward if that helps or her to breathe better!





TACEVAC Rule of Thumb #6

Casualties with blunt or penetrating wounds of the head where there is obvious massive brain damage and unconsciousness are unlikely to survive with or without emergent evacuation.



TACEVAC Rule of Thumb #7

Casualties with blunt or penetrating wounds to the head - where the skull has been penetrated but the casualty is conscious should be evacuated emergently





TACEVAC Rule of Thumb #8

Casualties with penetrating wounds of the chest or abdomen who are not in shock at their 15-minute evaluation have a moderate risk of developing late shock from slowly bleeding internal injuries. They should be carefully monitored and evacuated as soon as feasible.



Questions?





9-Line Evacuation Request



Required if you want an evacuation from ₃ and ₂



9-Line Evacuation Request

- Request for resources through tactical aircraft channels.
- NOT a direct medical communication with medical providers
- Significance
 - Determines tactical resource allocation
 - DOES NOT convey much useful medical information



9-line Evacuation Request

Line 1: Pickup location

Line 2: Radio frequency, call sign and suffix

Line 3: Number of casualties by precedence (evacuation category)

Line 4: Special equipment required



9-line Evacuation Request

Line 5: Number of casualties by type
(litter,
ambulatory)

Line 6: Security at pickup site

Line 7: Method of marking pickup site



9-line Evacuation Request

Line 8: Casualty's nationality and status

Line 9: Terrain Description; NBC contamination if applicable





TACEVAC Care for Wounded Hostile Combatants

- Principles of care are the same for all wounded combatants
- Rules of Engagement may dictate evacuation process
- Restrain and provide security
- Remember that each hostile casualty represents a potential threat to the provider and the unit and take appropriate measures
- They still want to kill you.





Tactical Evacuation Care Summary of Key Points

- Evacuation time is highly variable
- Thorough planning is key
- Similar to Tactical Field Care guidelines but some modifications





Tactical Evacuation Care Summary of Key Points

- Tactical Evacuation Rules of Thumb
- Evacuation Categories
- 9-Line Evacuation Request





Convoy IED Scenario

Recap from TFC

Your last medical decisions during TFC enroute to HLZ:

- Placed tourniquet on both bleeding stumps
- Disarmed
- Placed NPA
- Established IV
- Administered 500 ml Hextend®
- IV antibiotics
- Provided hypothermia prevention
- Your convoy has now arrived at the HLZ



Convoy IED Scenario

What is your 9-line?

Line 1: Grid NS 12345678

Line 2: 38.90, Convoy 6

Line 3: 1 Urgent

Line 4: PRBCs, oxygen, advanced airway

Line 5: 1 litter

Line 6: Secure

Line 7: VS-17 (Orange Panel)

Line 8: U.S. Military

Line 9: Flat field

*** Some individuals recommend adding a tenth line: the casualty's vital signs**



Convoy IED Scenario

Next steps?

- Continue to reassess casualty and prep for helo transfer
 - Search casualty for any remaining weapons before boarding helo
 - Secure casualty's personal effects
 - Document casualty status and treatment
- Helicopter arrives. Casualty is transferred to helo
- Medic stays with convoy



Convoy IED Scenario

What's Next?

- Casualty is now conscious but is confused
- Reassess casualty for ABCs
 - NPA still in place
 - First Hextend bolus completed 30 minutes ago
 - Tourniquets in place, no significant bleeding
- Attach electronic monitoring to casualty
 - Heart rate 140; systolic BP 70
 - O2 sat = 90%



Convoy IED Scenario

What's next?

- Supplemental Oxygen
 - Why?
 - Casualty is still in shock

What's next?

- 2nd bolus of Hextend® 500ml
 - Why?
 - Casualty is still in shock



Convoy IED Scenario

What's next?

- Inspect and dress known wounds and search for additional wounds

What's next?

- Try to Remove tourniquets and use hemostatics?
 - No
 - Why? THREE reasons:
 - Short transport time - less than 2 hours from application of tourniquets
 - No distal extremities to lose
 - Casualty is in shock



Questions/Comments